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| ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024 | | | EXAMINER LEE, ANDREW CHUNG CHEUNG | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,595

Applicant(s)

HINDERSSON, LARS

Examiner

Andrew C. Lee

Art Unit

2419

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Claims 1 – 17 are pending.
2. After further consideration, applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5, 8, 12, 13, 17 are rejected U.S.C. 103(a) as being unpatentable over by Chang et al. (6700956 B2) in view of Katseff et al. (US 6301258 B1).

Regarding claim 1, Chang et al. disclose a device, separate from an associated personal computer (PC), for handling asynchronously transferred digital packets on a network (*Fig. 1, element 10, col. 5, lines 1 – 20*), comprising: a network connection for exchanging digital packets with the network and the associated PC (*col. 6, lines 37 – 56*); a control connection between the device and the associated PC for transferring control signals and for connecting a telephony application, resident on the associated PC, to the device via the network connection wherein the device ("*elements 21, 22*"; *col. 5, lines 41 – 65, col. 6, lines 45 – 56*) comprises; a digital-to-analog-analog-to-digital

(D/A-A/D) converter connected to the codec, for converting the digital packets into an analog signal (*col. 7, lines 33 – 43*), and a coder/decoder (codec) (*element 37, codec, Fig. 2, Fig. 3, Fig. 4*)..

Chang et al. do not disclose explicitly a software frame buffer for buffering the digital packets; a coder/decoder (codec) connected to the buffer for decoding the digital packets.

Katseff et al. (US 6301258 B1) in the same field of endeavor teach a software frame buffer for buffering the digital packets (*"data buffer"; Fig. 1, col. 3, lines 20 – 26*); a coder/decoder (codec) connected to the buffer for decoding the digital packets (*Fig. 1, element 120 codec, elements 114, 116, col. 3, lines 16 – 26*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. to include the features of a software frame buffer for buffering the digital packets; a coder/decoder (codec) connected to the buffer for decoding the digital packets as taught by Katseff et al. One of ordinary skill in the art would be motivated to do so for providing a method for reducing latency in packet telephony caused by anti-jitter buffering (*as suggested by Katseff et al., see col. 2, lines 12 – 13*).

Regarding claim 5, Chang et al. disclose the device claimed wherein the D/A-A/D converter is a full duplex converter (*"provide full duplex voice capabilities"; col. 7, lines 33 – 43*).

Regarding claim 8, Chang et al. disclose a method for handling a digital audio signal with a personal computer (PC), the PC including a telephony application which is connected both to a network and to an audio device (*Fig. 1 element 10, apparatus interpreted as an audio device, element 14 PC interpreted as personal computer, element 19 interpreted as network; col. 5, lines 1 – 20*), the method including: exchanging audio packets which are asynchronously transferred over the network (*col. 6, lines 37 – 56*); transferring the audio packets asynchronously through the PC between the telephony application and the audio device, where said audio device is separate from the PC (*Fig. 1, col. 7, lines 50 – 60*); decoding audio frames in the audio packets in a codec device (*col. 7, lines 33 – 43*); and digital-to-analog (D/A) converting the decoded audio frames (*col. 7, lines 33 – 43, col. 9, lines 11 – 22*).

Chang et al. do not disclose explicitly buffering the audio packets in a frame buffer in the audio device.

Katseff et al. in the same field of endeavor teach buffering the audio packets in a frame buffer in the audio device ("*data buffer*"; *Fig. 1, col. 3, lines 20 – 26*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. to include the features of buffering the audio packets in a frame buffer in the audio device as taught by Katseff et al. One of ordinary skill in the art would be motivated to do so for providing a method for reducing latency in packet telephony caused by anti-jitter buffering (*as suggested by Katseff et al., see col. 2, lines 12 – 13*).

Regarding claim 12, Chang et al. do not disclose explicitly the method claimed including: indicating whether the frame buffer is overfilled; and speeding up the codec device when the buffer is overfilled.

Katseff et al. in the same field of endeavor teach indicating whether the frame buffer is overfilled; and speeding up the codec device when the buffer is overfilled (*col. 6, lines 44 - 62*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. to include the features of: indicating whether the frame buffer is overfilled; and speeding up the codec device when the buffer is overfilled as taught by Katseff et al. One of ordinary skill in the art would be motivated to do so for providing a method for reducing latency in packet telephony caused by anti-jitter buffering (*as suggested by Katseff et al., see col. 2, lines 12 - 13*).

Regarding claim 13, Chang et al. disclose the method claimed wherein the telephony application has a control connection to the audio device (*col. 7, lines 33 - 43*), the method including: Chang et al. do not disclose explicitly determining in the telephony application the width of the frame buffer; and controlling the frame buffer width by a control signal on the control connection from the telephony application.

Katseff et al. in the same field of endeavor teaches determining in the telephony application the width of the frame buffer; and controlling the frame buffer width by a control signal on the control connection from the telephony application (*Katseff et al. col. 3, lines 26 - 30, 36 - 44; Fig. 2, Fig. 3, col. 6, lines 22 - 52*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. to include the features of determining in the telephony application the width of the frame buffer; and controlling the frame buffer width by a control signal on the control connection from the telephony application as taught by Katseff et al. One of ordinary skill in the art would be motivated to do so for providing a method for reducing latency in packet telephony caused by anti-jitter buffering (*as suggested by Katseff et al., see col. 2, lines 12 – 13*).

Regarding claim 17, Chang et al. disclose the method claimed wherein the audio device operates in full duplex (*"full duplex capabilities"; col. 7, lines 33 – 43, col. 9, lines 11 – 22*).

5. Claim 2, 3, 4, 6, 7, 9, 10, 11, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (6700956 B2) and Katseff et al. (US 6301258 B1) as applied to claims 1 and 8 above, and further in view of Wilson (6081724).

Regarding claim 2, the combined system of Chang et al. and Katseff et al. disclose the device claimed, wherein the codec exchanges audio frames (*Chang et al., col. 6, lines 31 - 34; Katseff et al., col. 3, lines 20 - 26*).

Chang et al. and Katseff et al. do not disclose explicitly the codec and the frame buffer exchanges audio frames and the codec device includes an auxiliary codec for generating audio frames to be inserted in a stream of audio frames.

Wilson in the same field of endeavor teaches the codec and the frame buffer exchanges audio frames and an auxiliary codec for generating audio frames to be

inserted in a stream of audio frames (*Fig. 2, element 217 Aux Codec; col. 3, lines 1 – 4, col. 4, lines 1 – 5*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. and Katseff et al. to include the features of the codec and the frame buffer exchanges audio frames and an auxiliary codec for generating audio frames to be inserted in a stream of audio frames as taught by Wilson. One of ordinary skill in the art would be motivated to do so for providing an improved portable communications device and accessory system which enables both voice and control commands to be communicated in full duplex between a portable communication device and external accessories over a single flexible digital interface (*as suggested by Wilson, see col. 2, lines 59 – 63*).

Regarding claim 3, Chang et al. and Katseff do not disclose explicitly the device claimed wherein the auxiliary codec is arranged to predict audio frames and replace frames from lost audio packets with the predicted frames.

Wilson in the same field of endeavor teaches wherein the auxiliary codec is arranged to predict audio frames and replace frames from lost audio packets with the predicted frames (*Fig. 3, col. 4, lines 42 – 44, 52 – 67, col. 5, lines 1 – 6, 20 – 34*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. and Katseff et al. to include the features of wherein the auxiliary codec is arranged to predict audio frames and replace frames from lost audio packets with the predicted frames as taught by Wilson. One of ordinary skill in the art would be motivated to do so for providing an

improved portable communications device and accessory system which enables both voice and control commands to be communicated in full duplex between a portable communication device and external accessories over a single flexible digital interface (as suggested by Wilson, see col. 2, lines 59 – 63).

Regarding claim 4, the combined system of Chang et al. and Katseff et al. discloses the device claimed wherein the codec device is a hardware device (*Chang et al.*: "DSP42/CODEC17 comprises the FEB 3265 integrated circuit"; col. 7, lines 22 – 30; *Katseff et al.*, col. 3, lines 27 – 31).

Regarding claim 6, Chang et al. do not disclose explicitly the device claimed wherein the buffer is arranged to receive a control signal on the control connection from the telephony application, which control signal determines the width of the buffer.

Katseff et al. in the same field of endeavor teaches the device claimed wherein the buffer is arranged to receive a control signal on the control connection from the telephony application, which control signal determines the width of the buffer (*col. 3, lines 26 – 30, 36 – 44; Fig. 2, Fig. 3, col. 6, lines 22 – 52*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. to include the features of the device claimed wherein the buffer is arranged to receive a control signal on the control connection from the telephony application, which control signal determines the width of the buffer as taught by Katseff et al. One of ordinary skill in the art would be

motivated to do so for providing a method for reducing latency in packet telephony caused by anti-jitter buffering (*as suggested by Katseff et al., see col. 2, lines 12 – 13*).

Regarding claim 7, the combined system of Chang et al. and Katseff et al. discloses the device claimed wherein an appropriate one of the codecs can be selected by a control signal on the control connection from the telephony application (*Chang: col. 9, lines 11 – 22; Katseff et al. col. 3, lines 26 – 30, 36 – 44; Fig. 2, Fig. 3, col. 6, lines 22 – 39*).

Chang et al. and Katseff et al. do not disclose explicitly wherein the codec device has at least two codecs.

Wilson in the same field of endeavor teaches explicitly wherein the codec device has at least two codecs (*Fig. 2, elements 102, 217, col. 3, lines 39 – 56*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. and Katseff et al. to include the features wherein the codec device has at least two codecs as taught by Wilson. One of ordinary skill in the art would be motivated to do so for providing an improved portable communications device and accessory system which enables both voice and control commands to be communicated in full duplex between a portable communication device and external accessories over a single flexible digital interface (*as suggested by Wilson, see col. 2, lines 59 – 63*).

Regarding claim 9, the combined system of Chang et al. and Katseff et al. discloses the method claimed codec device.

Chang et al. and katseff et al. do not disclose explicitly wherein the codec device includes an auxiliary codec and the method includes: following in the auxiliary codec a stream of audio frames; generating audio frames in the auxiliary codec in dependence on the stream of audio frames; and inserting the generated audio frames into the stream of audio frames.

Wilson in the same field of endeavor teaches wherein the codec device includes an auxiliary codec and the method includes: following in the auxiliary codec a stream of audio frames (*col. 4, lines 1 – 5*); generating audio frames in the auxiliary codec in dependence on the stream of audio frames; and inserting the generated audio frames into the stream of audio frames (*Fig. 2, element 217 Aux Codec; col. 3, lines 1 – 4, col. 4, lines 1 – 5*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. and Katseff et al. to include the features of wherein the codec device includes an auxiliary codec and the method includes: following in the auxiliary codec a stream of audio frames; generating audio frames in the auxiliary codec in dependence on the stream of audio frames; and inserting the generated audio frames into the stream of audio frames as taught by Wilson. One of ordinary skill in the art would be motivated to do so for providing an improved portable communications device and accessory system which enables both voice and control commands to be communicated in full duplex between a portable communication device and external accessories over a single flexible digital interface (*as suggested by Wilson, see col. 2, lines 59 – 63*).

Regarding claim 10, Chang et al. and Katseff do not disclose explicitly the method claimed including: predicting audio frames in dependence on the stream of audio frames; and inserting predicted audio frames for frames in lost audio packets.

Wilson in the same field of endeavor teaches predicting audio frames in dependence on the stream of audio frames; and inserting predicted audio frames for frames in lost audio packets (*Fig. 3, col. 4, lines 42 – 44, 52 – 67, col. 5, lines 1 – 6, 20 – 34*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. and Katseff et al. to include the features of predicting audio frames in dependence on the stream of audio frames; and inserting predicted audio frames for frames in lost audio packets as taught by Wilson. One of ordinary skill in the art would be motivated to do so for providing an improved portable communications device and accessory system which enables both voice and control commands to be communicated in full duplex between a portable communication device and external accessories over a single flexible digital interface (*as suggested by Wilson, see col. 2, lines 59 – 63*).

Regarding claim 11, Chang et al. do not disclose explicitly the method claimed including: indicating whether the frame buffer is temporarily empty; and inserting generated noise audio frames when the buffer is empty.

Katseff et al. in the same field of endeavor teach indicating whether the frame buffer is temporarily empty; and inserting generated noise audio frames when the buffer is empty (*"buffer will also typically empty", "silence suppression"; col. 5, lines 17 - 25*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. to include the features of indicating whether the frame buffer is temporarily empty; and inserting generated noise audio frames when the buffer is empty as taught by Katseff et al. One of ordinary skill in the art would be motivated to do so for providing a method for reducing latency in packet telephony caused by anti-jitter buffering (*as suggested by Katseff et al., see col. 2, lines 12 – 13*

Regarding claim 14, the combined system of Chang et al. and Katseff et al. disclose the method claimed, wherein the telephony application has a control connection to the audio device and the method including selecting an appropriate one of the codecs by a control signal from the telephony application on the control connection (*Chang: col. 9, lines 11 – 22; Katseff et al.: col. 3, lines 26 – 30, 36 – 44; Fig. 2, Fig. 3, col. 6, lines 22 – 39*).

Chang et al. and Katseff et al. do not disclose explicitly wherein the codec device has at least two codecs.

Wilson in the same field of endeavor teaches explicitly wherein the codec device has at least two codecs (*Fig. 2, elements 102, 217, col. 3, lines 39 – 56*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Chang et al. and Katseff et al. to include the features wherein the codec device has at least two codecs as taught by Wilson. One of ordinary skill in the art would be motivated to do so for providing an improved portable communications device and accessory system which enables both

voice and control commands to be communicated in full duplex between a portable communication device and external accessories over a single flexible digital interface (as suggested by Wilson, see col. 2, lines 59 – 63).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 15, 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (US 6700956 B2).

Regarding claim 15, Chang et al. disclose a method for handling of a digital audio signal in connection with a personal computer PC, the PC including a telephony application which is connected both to a network and to an audio device (Abstract, *Fig. 1 element 10, apparatus interpreted as an audio device, element 14 PC interpreted as personal computer, element 19 interpreted as network*; col. 5, lines 1 – 20, “internet telephone application”; col. 8, lines 66 – 67) the method including: A/D converting an analog audio signal into a digital audio signal in the audio device (“convert an compress the signals from analog telephone to digital signals”; col. 7, lines 33 – 43); coding the digital audio signal and forming audio frames (col. 7, lines 33 – 43, col. 9, lines 11 – 22); forming audio packets which are transferred asynchronously through the PC between

the telephony application and the audio device, where said audio device is separate from the PC (*Fig. 1, col. 7, lines 50 – 60, col. 9, lines 11 – 22*).

Regarding claim 16, Chang et al. disclose the method claimed wherein the audio device operates in full duplex (*"full duplex capabilities"; col. 7, lines 33 – 43, col. 9, lines 11 – 22*).

Response to Arguments

8. Applicant's arguments filed on 9/19/2009 with respect to claims 1 – 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Sicher et al. (US 6385195 B2).
- b) Preston et al. (US 7151768 B2).
- c) Riemann et al. (5892764).
- d) Pang et al. (US 20030112758 A1).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/
Examiner, Art Unit 2419
<9/03/2009>

/Ayaz R. Sheikh/

Supervisory Patent Examiner, Art Unit 2419